Turner River Solar Hub

Proposal Content Document

Table 1: General proposal content description

Proposal title	Turner River Solar Hub	
Proponent name	Pilbara Energy Generation Pty Ltd	
Short description	The Proposal is for the development of the Turner River Solar Hub (the Proposal) in the Western Pilbara region, approximately 25 km -west of Fortescue's existing North Star Magnetite Project and 120 km south of Port Hedland (Figure 1).	
	The Proposal has an indicative disturbance footprint of 1,108.2 hectare (ha) and is located within a 1,416.6 ha Development Envelope (DE). The DE is separated across two distinct areas approximately 3.7 km apart, and linked via an existing unsealed access road, adjacent to Fortescue's mainline rail.	
	The Proposal includes:	
	 Installation of a solar farm including solar PV modules with a total capacity up to 573 MW, substations and switchyards and associated battery energy storage. 	
	 220 kV overhead transmission spur lines to integrate the solar farm into Fortescue's existing Pilbara Energy Connect System. 	
	- 33 kV distribution lines linking the PV arrays to the substation.	
	 Linear supporting infrastructure such as roads and corridors for overhead electrical reticulation. 	
	 Other ancillary infrastructure such as laydown areas, site offices and workshops and concrete batching. 	
	- Topsoil stockpiles	
	- Temporary power supply.	
	- Hydrocarbon and chemical storage.	
	- Waste management.	
	- Water will be supplied from existing and approved Fortescue water infrastructure.	

Table 2: Proposal content elements

Proposal element	Location / description	Maximum extent, capacity or range
Physical elements		
Solar PV Farm: • Solar farm PV modules	Figure 2	Development Envelope of 1,416.6 ha, including clearing of native vegetation up to 1,108.2 ha.

 Control room Overhead transmission lines (220 kV) Switchyards Substations and associated battery energy storage systems (BESS). 		Rows of solar panels will be adjoined creating arrays positioned $0.1 \text{ m} - 4 \text{ m}$ above ground level. Access tracks between the panels to facilitate ongoing maintenance. An optimised panel layout will be determined during a later detailed design phase.		
 Transmission line elements: 220 kV transmission spur line 33kV transmission distribution line Transmission line power poles and associated hardstands Transmission line service corridor 	Figure 2	Power will be exported to the existing PEC transmission network via 5 km 220 kV transmission spur lines. The 33kV distribution lines will be throughout the PV farm, linking the PV array's back to the substation		
Supporting and ancillary infrastructure elements: Access roads and service corridors Laydown areas Concrete batching Waste management Borrow pits Site offices and workshops Battery storage Fencing (external)	Figure 2	The Proposal will source water from existing approved water infrastructure for construction and operation phases. Existing water pipelines and turkey's nests will be used to transport and store water.		
Construction elements				
Earthmoving and associated construction plant/equipment	Figure 2	For duration of construction.		
Concrete batching plant	Figure 2	Maximum output capacity of 50 m ³ /hr. For duration of construction.		
Backup Power Supply: Diesel Generators Battery Storage	Figure 2	Up to 4 MW (instantaneous load requirement).		
Operational elements				
Solar Energy Generation		Design capacity based on current technologies (higher output may be achievable in future).		
Backup Power SupplyDiesel GeneratorsBattery Storage		Up to 1 MW (instantaneous load requirement).		
Proposal elements with greenhouse gas emissions				
Construction elements:				

Scope 1 emissions for the construction and installation phase of the Proposal are estimated to be approximately 75,000 tCO2-e, with a peak rate of approximately 62,000 tCO2-e in the first year of construction.

No Scope 2 emissions are anticipated from the Proposal in construction as all electrical power will be self-generated.

Emissions during construction of facility and equipment are not expected to be significant.

Operation elements:

No significant ongoing Scope 1 emissions.

No Scope 2 emissions are anticipated from the Proposal in operations as all electrical power will be self-generated

Scope 3 emissions during operations are expected to be approximately 35,951 tCO₂-e per annum.

Rehabilitation

Topsoil will be stored in allocated storage areas and used to rehabilitate areas disturbed for temporary facilities following construction. At the completion of the Proposal, any infrastructure no longer required will be removed and disturbed areas rehabilitated consistent with the surrounding landscape. Topsoil from permanent clearing will be spread consistent with the surrounding landscape or stockpiled.

Commissioning

The commissioning of the solar farm will be undertaken subject to operational limits above. Collector groups will be energised progressively as they are constructed.

Before any operational activity begins, comprehensive system testing will be conducted on all solar panels, electrical infrastructure, and grid connections to ensure that all components meet safety, performance, and environmental standards. Performance testing will be completed after commissioning if required.

Decommissioning

At completion of the operational phase, the decommissioning of the solar farm will involve the removal of all solar modules, towers, foundations (to a specified depth), transformers, cabling, and other above-ground infrastructure. Underground components, such as cables or foundations below a certain depth, may be left in place if deemed environmentally preferable, in line with regulatory guidelines. All removed materials will be handled responsibly, with recyclable components sent to appropriate facilities and non-recyclable waste disposed of according to local regulations.

Works will be planned to minimise environmental impact and restore the site to its pre-development condition as much as feasible and in consultation will all relevant stakeholders.

A decommissioning and rehabilitation management plan will be prepared at a minimum of five years prior to the last planned electricity generation activity on the site.

Other elements which affect extent of effects on the environment

Proposal time*	Maximum project life	25 years At the end of life, the site will either be repowered or decommissioned.

Construction phase	18 months for each stage.
Operations phase	Operations across the proposed site will be achieved once commissioning of all stages is complete.
	Infrastructure to be maintained and then replaced at the end of asset life (approximately every 25 years).
Decommissioning phase	Approximately 24 months

* Proponents should only provide realistic timeframes to avoid unnecessary change to proposal applications at referral (section 38C), assessment (section 43A) or post assessment (section 45C).





Figure 2 Indicative Disturbance Footprint

Requested By: R. Hughes	Date: 14/01/2025	
Drawn By: S. Bowver	Size: A4P	
Revised By: scostello	Revision: 2	
Approved By:	Confidentiality: 0	
Scale: 1:75.000		
Coordinate System: GDA2020 MGA Zone 50		
Project Name: 4519OP002 MP EN 0064 TRSH		
Document Name: 4519OP002 MP EN 0064 002		
Data Source(s):		
Topography, GA		
All other data, Fortescue, 2024		
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